

PHYS3122A Homework 9, due 11/6/2009 at 5pm

Note:

This is the last homework before the second midterm, which is on Friday next week (11/13). Similar to the first midterm, you'll be allowed to bring a self-prepared formula sheet to the exam (double-sided ok). No lecture notes or textbook allowed.

Tentatively, the second midterm will cover the method of image and induced charges on conductors, separation of variable in spherical coordinates, dipole interaction, polarization and bound charges, quadrupole potential.

- 1) Solve problems 4.1, 4.5, 4.6, 4.8, 4.9, 4.10, 4.13.
- 2) A dipole is suspended above an infinitely large, grounded metal plane. Which orientation of the dipole has lower energy: parallel to the plane or perpendicular to the plane?